THE VETERINARY RECORD

A Weekly Journal for the Profession.

EDITED BY WILLIAM HUNTING, F.R.C.V.S.

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PROFESSOR AXE.

Every member of the profession will be grieved to hear that Prof. Axe recently met with a serious accident, having been thrown out of a trap. His injuries include damage to shoulder and ribs, and will entail his enforced absence from duty for some time. We are glad to add that the latest reports state the Professor is progressing favourably.

LACTATION IN A BITCH.

The case related by Mr. Swift of a barren bitch acting as foster mother to the puppies of a another bitch which died shortly after parturition, is curious and interesting. It is not uncommon to see the mammary glands of a bitch swollen and full of milk nine weeks after œstrum. Possibly some such condition existed in this terrier bitch at the time the pups were first allowed to suck, and then the functional activity of the glands would be stimulated and kept up by the suction of the puppies. We should be glad to receive any experience of similar cases or any remarks on the subject of such abnormal lactation.

THE REGISTRATION OF FARRIERS.

We referred some time since to the manner in which this scheme was carred out. A certificate stating that its holder was "qualified *to work* as a registered shoeing smith" has been given to every candidate who has successfully passed an oral examination. No attempt has been made to test the candidates' ability to make a shoe, to put it on, or to prepare a foot. It is asserted that this can be tested by having models, shoes and hoofs to examine on, and the recently issued report refers to the art of the farrier as "mere handicraft" Surely it is more essential for a farrier to be a skilful workman than to be well versed in the anatomy and physiology of the foot. No amount of mastery of principles will make a man a workman, and a really good journeyman may be entirely ignorant of any principles of anatomy or physiology. Granting that some technical training would be an unmixed advantage, it is still certain that the greatest and first necessity is "mere handicraft," or in other words the manual dexterity of a workman.

The importance to the veterinary profession of attention to this matter lies in the fact that the Royal College of Veterinary Surgeons is, with the Royal Agricultural Society and the Worshipful Company of Farriers, jointly responsible for the result of this scheme. In fact the veterinary element on the committee is really the guiding power, and the section responsible for what has been done and what is being done. Without a practical examination no farrier should be given a certificate that he is "qualified to work." All that the present examination warrants is a certificate that the man knows sufficient of the *principles* of his art to render him a good farrier if he can use his tools. We understand that recently the examination at a table is supplemented by a declaration from the candidate that he has worked at the trade for a certain time. This is an advance — an improvement on the previous method—but it is not enough. A farrier is a workman, and any examination which does not show his work is insufficient. Imagine examining in a room a gamekeeper on shooting, and then granting him a certificate of competency! The one is no more absurd than the other.

DESIGN OR ADAPTATION.

When Dr. Buckland wrote his Bridgewater treatise he adduced arguments in favour of the theory that the structure of all living things was designed especially by Providence for the circumstances in which we find them. When Darwin wrote his various books he adduced arguments in favour of the theory that the structures of animals had become suited to their surroundings by adaptation. To agree with Darwin is not usually looked upon as a sign of insanity, and a discussion on the uses and evolution of the sinuses in the heads of animals need not be accepted as a branch of theology. We say this with all respect for those Members of the Royal Counties V.M.A. who think otherwise. Truth is best served by seeing as many sides of a question as possible, and the mere fact that some natural object exactly fulfils the requirements of its surroundings cannot be accepted as proof of design. For instance, a river exactly fits its channel and the river banks exactly fulfil the requirements for facilitating the flow of the river. A child might argue that the channel was specially designed for the river, but Mr. Goodall would probably correct him, and point out that the channel had only adapted itself to the river. The child might reply that anyone who could not see design in such a beautiful arrangement of water and channel must be—"well, not sane." This reply would, of course, not be argument, and possibly might be considered—well, not civil.

CASES AND ARTICLES

OPEN PAROTID DUCT

By S. Beeson, M.R.C.V.S., Hereford.

Nov. 15th, large cart colt, three year old, admitted with punctured wound on inside of left branch of jaw, caused by a kick from another horse. Flow of saliva from wound very copious when taking food. Applied astringent dressings; fastened the jaws firmly together with a leather strap, withheld all solid food.

16th. Quantity of saliva discharge much less.

17th. Same as yesterday, applied cautery.

18th. Gave a little solid food and found the duct still open. Put on a large charge plaster in strips and pad over them, fixing the whole firmly in position by a shaped hood of strong linen with several broad strings passing twice round the head.

No further discharge of saliva. Bandages removed on 24th, and strap round jaws loosened a little.

On 25th, bran-mash taken and gradual resumption of ordinary food, without the horse showing any ill effects from his fast. He took a small quantity of hay tea and a very little oatmeal gruel.

VERMINOUS COLIC.

The following case came under my care on the morning of Thursday, 24th inst.

The subject was a yearling filly. The symptoms presented were dullness, crouching and slight colicky pains. The pulse was almost imperceptible, and temp. 104 F. Treatment consisted of tinc. opii. and ol. lini. However, as time wore on the pains became more frequent; mouth cold (internally) as were also the extremities. The animal was quite conscious till a minute or two before death, and stood as long as it possibly could; before it fell every limb shook violently. During the later stage of the case the animal continually pressed its quarter against the wall, and when manipulating the abdomen it evinced great pain, as it also did when the injection tube was put into the rectum. It often endeavoured to get on to its back and so we placed it in that position, when it would lie quiet for fifteen or twenty minutes, during which the bowels were very noisy. At last, however, there being no pulse, it fell and died, after a most determined struggle for life.

I made a *post-mortem* five minutes after death, when I found the following conditions:—

On opening the abdomen a great quantity of fluid escaped, which appeared to be a mixture of serum and blood. The large bowels were full of fluid of a leaden hue. I searched for the rupture and at last found a large swelling in the fatty part of the large colon all covered with blood. After excising this and carefully examining it there were to be seen numerous "strongyles," of the "armatus" class, moving about in the blood vessel. The smaller branches, which supply the larger intestines with blood, were blocked with ante-mortem clots, which in some cases were white, being, of course. all fibrin. I concluded that death had not been caused so much by loss of blood as from gangrene of the intestine, brought about by the small arteries being blocked, as a result of the work done by the 'strongyles,' which were found all along the main artery and in the branches.

At the beginning of this year the same gentleman, who is a breeder of horses, lost a yearling colt from aneurism of the anterior mesenteric at its junction with the aorta, but this was 'aneurism' of the lower part of the artery.

Workington.

IMPROVED FIRING IRON.

By George Upton, Junr.

The firing-iron made for me by Messrs. Arnold is, I consider, a great improvement upon the older pattern. The iron is held in its position by means of a spring which fits into a groove in the iron, which spring holds the iron perfectly tight. The iron can easily be released by raising the catch and tapping the bottom of the handle, and can be easily re-adjusted by raising the catch and pressing the handle into the iron.

These kind of handles have advantages:—They can be applied to any kind of iron, docking, castrating, etc.; they do not get burnt in the fire; they cannot get loose like the old-fashioned screw irons; they cannot get hot and burn the hands when operating; they can be packed into less space when riding, and are less weight; they are not expensive, and can be applied to any socket-form iron now in use.

In bringing these handles before the profession I do not claim for them any originality on my own part, but trust that they may prove of some use to the members of the profession, and that the extra expense may be well repaid by their practical usefulness.

12 Gayton Road, Hampstead, N.W.
April 12th, 1892.

LACTATION EXTRAORDINARY.

By Dick Swift, pupil with Mr. Briggs, Halifax.

I enclose photograph of wire-haired fox terrier bitch and two thorough-bred pug puppies.

History of case is as follows, viz., owner of fox terrier bitch also possessed pug bitch—the two being almost inseparable.

About the middle of May of the present year both

bitches were in use together, and the pug was put to service.

On the 21st of July the pug bitch gave birth to two puppies and died from puerperal fever on the 23rd of July.

On July 22nd the fox-terrier bitch, which has never had pups in her life nor been put to service, adopted the two pug puppies, and has successfully reared them without extraneous aid of any description. She had a full flow of milk and guarded her foster charges most jealously.

One strange feature of the case was that during the protracted birth of the pug puppies, the fox-terrier bitch was noticed to be particularly uneasy and restless.

Can you, Sir, or any of your readers, explain this peculiar physiological phenomenon? In our experience it is without parallel.

TRANSLATIONS.

ACCIDENTS DUE TO THE UNION OF THE EPIPLOON WITH THE CICATRIX OF CASTRATION.

By M. D. Bonnigal, Veterinary Surgeon at Vendôme.

Trans. by Thos. J. Watt Dollar, M.R.C.V.S.

1. This first case was with respect to a horse which had been castrated (châtré) two months. It was suddenly attacked with violent colic whilst returning from the drinking trough, and I found it dying after some hours of suffering. I had not even time to try any treatment. It died lying on its back, the limbs pressed against the stable wall. This peculiarity drew my attention to the probable existence of a hernia. I assured myself that it was a gelding (hongre), but noticed that the left cicatrix of castration was drawn perceptibly towards the belly and situated in a sort of infundibulum formed by the skin.

Autopsy.—The epiploon was the seat of a remarkable congestion. Its extremity was intimately fixed to the castration cicatrix of the left side by the intermediary of a sort of tumour of the size of a small apple, formed of fibrous tissue traversed by a large number of knotted vessels. In the abdomen it appeared like a cord stretched longitudinally, under which some loops of the small intestines had passed and become as it were strangled. In fact, these loops were only seriously congested at their lower part, and this zone was separated above from the healthy part by a straight and nearly horizontal line. There was nothing else of note in the digestive apparatus.

2. This was a horse, seven years old, belonging to Dr. C., and had been castrated about fifteen months. It had never been ill, but had very little pace and would not answer to the whip. In consequence of the animal becoming worn on its limbs it was sent to a farmer to be occasionally worked on the land. There it was put on green food. One day, about three hours after the morning meal, he was taken suddenly ill whilst returning from the forge. The following are the symptoms noticed seven hours after the attack: dull colicky pains, the animal was restless, scraped the ground carefully, the lumbar muscles were stiff, the facial muscles were drawn up, there was great prostration, pulsations 80 and feeble, respirations 30 slow and deep, temperature 40°C.

I noticed a cold and indolent œdema as large as a child's head in front of the sheath. The appetite was gone, and a very abundant liquid diarrhœa supervened. In consequence of the œdema I explored the inguinal region. At the seat of the testicular cord on the left side I found a soft string of the size of a finger, which was very sensitive to pressure notwithstanding the extreme prostration of the subject. It terminated below at the cicatrix of castration by a swelling of the size of a hen's egg.

Thinking it was a similar case to that already recorded, I explained my diagnosis to the doctor, who seemed very much surprised, and he asked me to meet a fellow practitioner; this I willingly acquiesced in, at the same time saying that if it would be any satisfaction to him I should be glad if he would follow the treatment prescribed by the gentleman whom he proposed as consultant.

The subject being treated for enteritis died on the fourth day. I made the autopsy in presence of Dr. C.

The epiploon, attached to the left castration cicatrix, was the seat of intense inflammation; the parietal layer of the peritoneum in the neighbourhood of the left inguinal ring was very much injected.

The peritoneum contained about a quarter of a litre of somewhat muddy fluid. The intestinal mucous membrane showed no lesions. Near the cæcum and for about fifty centimetres (20 inches) the peritoneal layer of the small intestines presented twenty nearly circular red spots, of the size of a ten-centimes piece (a penny).

There was nothing in the other organs. To recapitulate, the lesion of capital importance was the very acute inflammation of the epiploon. The tumour which attached this organ to the cicatrix of the scrotum, the same as the preceding and the following cases, was formed of fibrous tissue, into which a number of vessels were irregularly interspersed. The cicatrix was also drawn upwards towards the inguinal canal. I thought that the trouble was caused by distension of the abdomen resulting from feeding on grass. If my diagnosis had not unfortunately appeared somewhat extraordinary I should have proposed the operation of opening the castration wound to liberate the epiploon. However it has been seen by case No. 4 that this operation would not have been sufficient.

3. A client of M. B., veterinary surgeon at M—— S——S——, took a horse to him one day which had been castrated for a very long time but had an enormous tumour of at least 40 centimetres in diameter in the inguinal region. This tumour com-

menced to show itself six months after castration and was operated upon with the red-hot iron, but without success. From there the horse was sent to M. L———, veterinary surgeon, who kept it in hospital for a year, during which time he operated on it twice, but without success. The tumour always reappeared, and the subject was reduced to a skeleton. At last it was sent to the knackers, where I saw it slaughtered and in that way was able to make the autopsy.

The enormous tumour, of the size of two decalitres (1) was formed of fibrous tissue intermixed with numerous groups of vessels, it occupied the whole of the inguinal space and had the form of a cone with a very large superior base and an irregular inferior extremity. By detaching it from the abdominal walls, I found the right inguinal canal free and the cord of the same side atrophied. The tumour ascended into the left inguinal canal near to the cord, which in this case also was atrophied; in this channel the new growth was as large round as an egg. It did not extend beyond the upper orifice of the canal, but at this point had become intimately attached to the pelvic flexure of the colon for a distance equal to the dimensions of a 5 franc piece. There also it suddenly diminished by being attached to the epiploon, of which it was evidently only the continuation.

None of the abdominal organs were congested or inflamed any more than the epiploon itself. I suppose that the connection of this tumour with the epiploon was consecutive to the deep cauterisations which were made.

4. One of my clients showed me a horse 4 years old, which had the left testicle very voluminous and deformed. I found on examining this organ that more than a third of it was indurated and attributed the restless character of the animal to this lesion. At work, especially when attached to a cart, he would suddenly stop and refuse to pull any more. Castration was decided on, I found the testicle in a very bad state, and an epiploic hernia strongly attached to the epididymus as well. To avoid the epiploon becoming adherent with the cicatrix, I dissected at least 10 centimetres of it, and performed the operation of castration by incising all the testicular membranes, at the same time taking up the dartos (which I had carefully separated) into the clams (casseaux). The operation seemed successful; nevertheless the restlessness persisted, and six weeks later I found that the epiploon had again descended and had become attached to the castration cicatrix.

5. One day I was consulted about a horse which, although working and feeding well, seemed uneasy each time it had fed, and sometimes stopped eating its food. This animal, which was a gelding, had epiploic hernia of the left side with attachments, and the cicatrix of this side was tightly drawn upwards. Since seeing these different cases, I have often examined the inguinal region of geldings, and I have several times found adhesions of the herniated epiploon, without the subjects (according to the sayings of the owners) being in the least inconvenienced.

(1) Decalitre—10 litres—2 1/5 gallons.

From these cases seen in the space of a few years, I conclude that the examination of the inguinal region of geldings, both externally and by the rectum, should not be neglected; that epiploic hernia with adhesions may cause laziness, restlessness, serious colic, peritonitis or incurable pseudo-champignon; that it is not necessary that the epiploon be taken up by the clams at the moment of castration in order to produce this lesion, as I had supposed before I had seen the case No. 4; lastly, that the herniated organ should be completely returned to its normal position by rectal manipulation.—*Pathologic et Thérapeutique Recueil de Médecine Vétérinaire*, 1892.

PROTECTIVE INOCULATION AGAINST FOOT AND MOUTH DISEASE.

By Dr. Behla.

Translated by Jno. A. W. Dollar.

[In *The Berliner Thierärztliche Wochenschrift* for the 1st December, is a long and interesting article on the above subject which, however, contains much of local interest only. I have, therefore, very considerably condensed the following account. (Trans.)]

Following on an outbreak of foot-and-mouth disease in cattle, in Luckan, it was noticed that many persons who consumed the milk were affected with an exanthematous disorder. Dr. Behla's attention was called to the subject, and the result of his investigations was the discovery of an organism of an amœboid character in the discharges. What its precise relation to the disease is has not yet been determined. The author proceeds to point out that for a long time past empirical attempts to protect have been made by inoculation with the saliva, the idea being to produce a milder and more easily controlled form of disease. A common method was to place a piece of tow saturated with saliva of the disease in the mouth of the healthy animal. Also when the fresh warm saliva is carefully smeared on the mucous membrane of the upper lip, inoculation occurs in about 75 per cent. of cases. Other ways were to inoculate the food, and more recently, to pass inoculated threads under the skin of the ear or tail. These methods, however, are not really protective inoculation but only a carrying over of the disease. They are attended with no particular advantage, often indeed with complications, and up to the present it has been found impossible to confine the disease to one portion of the body or to modify its virulence.

This disorder being, like small pox, accompanied by the formation of vesicles, it is not remarkable that inoculation with the vesicular fluid early suggested itself, and accordingly we find, among many others, Spinola * inoculating sheep in the ear with fluid taken from the coronal blisters. As a rule in such cases in about 48 hours a blister forms at the inoculation spot which, however, is larger than

* Handbuch der Speciellen Pathologie und Therapie für Thierärzte (Dr. Dieckerhoff,) 2nd edit., 2nd vol. p. 92.

that of cow pox and soon breaks. The eruption seldom attacks other points. On the third day the thread is removed and usually the animal is found to be protected. Spinola himself describes the results as satisfactory. But this protection is quite different to that of small pox inasmuch as it only lasts from one to two years, at the most three years; and on the other hand at times only six months. Diecherhoff relates a case of strebels * where protected animals again suffered within six or eight weeks.

The author then enlarges on the loss to owners from falling off in condition, abortion, dying of calves and sucking pigs, loss of milk, stoppage of sale, impossibility of working the oxen, lowering of price, etc., and calculates the annual loss to Germany at many millions of marks; the loss in one province only (Posen) being not less than twelve millions.

The order in which the various domestic animals stand as regards their susceptibility to the disease is as follows:—cattle, swine, sheep, goats. Even the domestic fowl is capable of contracting it, though not readily Behla had the opportunity of observing an outbreak amongst fowls, and the thought occurred to him that it might be possible to confer immunity by inoculation with the blood serum of birds that had recovered. He found it comparatively easy to produce the disease in fowls by irritating the mucous membrane of the mouth, and smearing the latter with the warm saliva. The fowls exhibit impaired appetite, uneasiness, general langour and heaviness, the mucous membrane of the mouth and pharynx is red and swollen, thickly covered with tenacious mucus and shows many vesicles. These latter are also found at times on the comb but seldom found on the feet. In about 12 to 14 days these symptoms have abated and inoculations can then be made. Though promising in some respects, this method was not always reliable, and Behla cast about for another and surer method. Considering that in infectious disorders other secretions possess the property of protecting, he next turned his attention to testing the saliva which is produced in such enormous quantities by affected animals. Of the three points of attack, the mouth, udder and claws, the mouth is that where the most active changes take place. Taking saliva from cattle which were at the height of the malady and had blisters in the mouth, or removing the material directly from the blisters, Behla cleansed the fluid so obtained from grosser impurities by passing it through sterilized gauze, filtered it till germ free (Keimfrei) added to it half per cent of carbolic acid and began inoculations. His first experiment was with three hens which received subcutaneously, at a point just below the beak, on the first day 0·5, on the second day 1·0, and on the third day 1·5 ccm. of this fluid. The reaction was slight. At the point of inoculation there was scarcely any inflammation; after 6 to 8 hours the temperature rose, there was impaired appetite and some uneasiness, but in 24 hours the birds were again bright and began to eat. Six days afterwards the control inoculations were made, but in each case without result. He also inoculated a sucking pig and a lamb by injecting the fluid subcutaneously at a point just below the under jaw. These received in each case, on the first day 1·0 ccm., on the second day 1·5 ccm., and on the third day 2·0 ccm., of the above mixture. These animals also failed to re-act when control-inoculated on the sixth day.

The results are on the whole encouraging. The number of experiments is small, and of course admits of no absolute conclusion. But the damage which is effected by foot and mouth disease is so great that the desirability of some public veterinary institution taking up the matter and carrying it further will probably be recognized by everyone.

* Schweitzer Archiv, 1881, p. 144.

VETERINARY SOCIETIES.

ROYAL VETERINARY COLLEGE VETERINARY MEDICAL ASSOCIATION.

The 170th General Meeting was held in the theatre of the College on Wednesday, November 23rd. Mr. Brain took the chair at 8 o'clock. There were also present Mr. Wild, President; 32 members, and 8 visitors.

The following were elected as members of the Association: Messrs. Wood, Reynolds, Mulvey, Reeks, Robertson, Williams, Parks, Hills, Kendrick and Dunstan. Messrs. Bowker, Jones, Spurgeon, Murphy Dupont, Idenden, James, Skewes and Matthews, were proposed as new members. The Chairman then called on Mr. Farrant to read his paper on "The Pulse, its Modifications in Health and Disease."——Mr. Farrant in his paper said—"The pulse may be defined as the impulse or shock caused by the overfilling of the aorta during the ventricular systole of the heart; the chief factors in the pulse are—1st. The Heart, 2nd. Nerve Influence, and 3rd. Condition of Arteries and Arterioles." Under these headings the essayist gave the structure of the heart circulation of blood through the system generally, also the structure of arteries and veins, and the nerves which affect the pulse by inhibition or acceleration of the heart's action. He then passed on to the consideration of the pulse in health, which he said "had a nearly uniform relation between the frequency of its beats and of the respiratory movements, the proportions being, as nearly as possible, one respiratory movement to three or four pulsations—thus the pulse in a healthy horse beats about 40 per minute the respirations being about 12, but this does not exist in the cow, indeed the pulse in that animal in a state of confinement cannot be depended on as regards the number of its beats; the states of pregnancy and obesity, the effects of artificial food and the activity of the lactiferous glands, as well as the excitement caused by rumination, generally produce such an effect on the nervous system as to cause an increased action of the heart. With this exception the relation between the pulse and respiratory movements exists even when these centres are accelerated by exercise, but in disease they cease to exist.

Normal number of pulsations in the different animals and the best situations for registering are the following: *Horse* 35-45, superficial temporal subzygomatic, submaxillary and radial arteries. *Ox* 40-50, radial, submaxillary. Carotid at bottom of neck, median coccygeal and digital. *Dog* 80-100 depending on size and breed — Femoral. *Sheep* 70-80, taken at the femoral

artery. The varieties of the pulse as being recognisable to the touch are (1) as regards the number of pulsations within a given time it is said to *frequent* or *infrequent*. (2) As regards the time which seems to be occupied by each beat the pulse is *quick* or *slow*. . (3) As regards the dilatability of the artery in length and breadth it is *large* or *small*, and (4) As regards the compressibility of the artery it is *hard* or *soft*, the essayist here described these terms, and also gave a description of the *intermittent* pulse, the *double* pulse and the *venous* pulse. A spirited discussion followed, in which Messrs. Wild, Scott, Hoole, Pauer, Clapp, Peele, Jarvis, and many others joined.

On the motion of Mr. Scott a hearty vote of thanks was accorded the essayist, which concluded the meeting.

E. E. SELDON, *Assist. Sec.*

ROYAL COUNTIES VETERINARY MEDICAL ASSOCIATION.

ANNUAL MEETING.

The annual meeting of this Association was held at 10 Red Lion Square, on Friday, November 25th, when, owing to various circumstances, the attendance was unusually small. The President (Mr. H. G. Lepper, Aylesbury,) occupied the chair, and there were also present Messrs. W. Wilson, J. D. Barford, T. B. Goodall, F. W. Wragg, J. P. S. Walker, and J. S. Hurndall; as visitors, Professor W. A. Edgar, of Dartford, and Mr. H. J. Goodall, of Melton Mowbray.

Apologies for inability to attend were received from Mr. James F. Simpson, Mr. Verney, Mr. Flanagan, Mr. Irving, Mr. W. Wheatley, Sir Henry Simpson, Professor Williams, Professor Walley, Professor Smith, and Prof. Penberthy.

Prof. PENBERTHY wrote: — I really regret being unable to attend, as a most useful discussion should follow this paper (Mr. Goodall's) which is of no ordinary character. Though I think some matters may be debateable, the evident acute personal observation which the subject has received lays on the profession a debt of gratitude and acknowledgement to Mr. Goodall."

NEW MEMBERS.

The following gentlemen were, on the proposition of the President, seconded by the Hon. Sec., unanimously elected members of the Association: Mr. H. G. Rogers, of London; Mr. Hatch, of Beaconsfield; and Mr. Owen, of Thame.

LITHOTOMY INSTRUMENTS.

The HON. SEC. reported that the President had found some difficulty in keeping within the precise limits of the sum set down for the purchase of these instruments —£20. The actual cost, with the discount, came to £28, but Messrs. Arnold & Sons had under the circumstances very kindly asked the Association to accept a donation of five guineas towards the cost. (Hear, hear.)

The PRESIDENT said they were indebted very much to Professor Axe for his kindness in superintending the manufacture of the instruments, by which several improvements had been effected (Hear, hear.)

FINANCIAL.

The HON. TREASURER presented his statement of accounts for the year, which showed £25 3s. 6d. received. The working expenses had been very light, amounting to only £9 1s. 6d., and there was now a balance to the credit of the Association of £85 3s. 8d. (Applause.) There were 55 members at present on the roll. In conclusion, Mr. Walker asked to be relieved from the office of treasurer, which he has held for 8½ years, ever since the formation of the Association.

ELECTION OF OFFICERS.

Office-bearers for the coming year were then unanimously elected as under, Mr. Walker having been persuaded to hold the treasureship for one more year:— President, Mr. J. D. Barford, of Southampton; Vice-Presidents, Mr. J. P. S. Walker, Mr. Verney (Oxford); Mr. T. B. Goodall (Christchurch), and Mr. H. G. Lepper, (the retiring president); Hon. Sec., Mr. J. Sutcliffe Hurndall.

PLACE OF NEXT MEETING.

On the proposition of Mr. Wragg, seconded by Mr. Wilson, Reading was unanimously decided upon as the place of next meeting.

THE BRITISH INSTITUTE OF PREVENTIVE MEDICINE.

The HON. SEC. read communications respecting this proposed Institute from Sir Joseph Lister and Dr. Fleming.

Mr. BARFORD thought as this Association was in such a satisfactory financial position it was only right they should subscribe towards the fund being raised, as he believed the Institute would do much to advance the veterinary profession.

Mr. WILSON heartily concurred, as did the President; and Mr. Barford gave notice that he would put a notice on the subject on the agenda paper for the next meeting.

THE NASAL CHAMBERS AND FACIAL SINUSES OF THE HORSE.

The PRESIDENT expressed great regret that there were not more members present to take part in and hear the resumed discussion on Mr. T. B. Goodall's paper on this subject (read at the Maidenhead meeting). Unfortunately at their third meeting in London the Association never had had so many members as at the spring and summer meetings, and perhaps the fact that that most interesting and valuable essay had been printed and circulated had something to do with it. As Mr. Hurndall moved the adjournment of the discussion until that day perhaps he would be good enough to re-open it.

Mr. HURNDALL said he had rarely had the pleasure of listening to a paper that had evidently involved the writer in so much close thinking and work. As it certainly deserved at their hands something more than extempore speaking, at any rate upon the part of the one who took on himself the position of opening the discussion, he should make no apology for reading his remarks. He said: "In attempting to re-open the discussion upon Mr. Goodall's most excellent paper entitled "The Nasal Chambers and Facial Sinuses of the Horse," read at the summer meeting of this Association held at Maidenhead on June 24th, 1892, on that auspicious occasion when we were so luxuriously fêted by our esteemed colleague and friend Mr. James Simpson, during the period of his Mayoralty for the Borough which he honours by his residence, I am assuming a somewhat onerous responsibility; for I do not hesitate to affirm with considerable confidence that the merits of Mr. Goodall's essay are of a very high order, and he who attempts to discuss the paper should be cautious to see to it, that his remarks are somewhat worthy of the subject and the occasion. Rarely, if ever, has it been my lot to listen to a more carefully thought out subject, even by one, whose practice in literary work placed him in the front rank of our profession, and certainly never from one who, as Mr. Goodall tell us he is, is a busy, every day hard working practitioner in a country district. All honour therefore to Mr. Goodall and the Association which he honours by his membership; I trust sincerely that Mr. Goodall's example in so worthy a direction will serve as an incentive to some of our younger members to go and do likewise, then as members

of the Royal Counties Veterinary Medical Association we shall have good cause to be proud of our body. Personally I feel deeply indebted to Mr. Goodall for the work he has done, and beg herewith publicly to express my high appreciation of the literary and scientific attainments he has placed at the service of the Society of which I am but an humble officer.

Free discussion, untrammelled by any abitrary laws, is one of the privileges we enjoy in this glorious old country of ours, at all events with one exception, namely Ireland; but as I am not proposing to enter upon matters political, this single exception has no bearing upon our Association, fortunately we are not called upon to express our individual opinions, where feelings run so high as they do on the relations of countries one to another, and we may, at all events in the veterinary profession, venture to express views that are diametrically opposed to orthodox and accepted principles, without running the risk of being scouted as quacks, or shunned by the main body of the profession as though not deemed worthy of even civil recognition. Personally I have always received from my professional brethren the greatest consideration, although holding views on matters therapeutic that are totally opposed to orthodox rules, for this reason I congratulate myself that I am a member of the veterinary rather than the medical profession—although from a financial point of view I am certain I am the loser.

Freedom of discussion is an invaluable privilege, but we need also if we would properly appreciate our opportunities, rightly guage the meaning of the word *discussion*. We were told at Maidenhead by Mr. Hunting, that his idea of discussion was to raise questions only upon the subject under consideration with which he disagreed, and to allow those points about which he was pretty much at one with the essayist to pass unnoticed; now I venture to suggest, that is a very one sided view, and is calculated not only to discourage an essayist, but also to miss all the good that might otherwise be obtained from a well written and digested paper; no doubt facetious criticisms and sharp repartée, amounting only too often to carping objection, is at the time calculated to make a fleeting and temporary impression on the minds of hearers and to tickle the mental fancy; moreover it may perhaps convey the idea that the speaker is a very clever fellow, but on reflection this sort of discussion will not bear comparison, in solid results, with the thoughts of one who endeavours to discover all that is good in an essayists production, and confirm and add to the thoughts and presentments he has advanced out of the resources of your own practical experience, touching lightly on merely trivial points of difference while only allowing keen criticism on vital principals; such, roughly, is my view of how discussion should be conducted, and on these lines I propose to deal with Mr. Goodall's paper.

There is undoubtedly among those of us whose daily calling only very occasionally makes a demand upon our practical acquaintance with anatomy and physiology a tendency to forget what little we ever knew of these sciences; indeed, I have on occasions, far too numerous for creditable recapitulation, met with members of the veterinary profession, who if one must believe what was heard, rather prided themselves how little they really knew of these and cognate sciences, but who were boisterously loud about their vaunted knowledge of practice. Practical men they called themselves; practical men, forsooth!! how can a man practise what he does not understand, and if he does not first of all master the theoretical details of what he has to do, how can he do it? No! these proudly vaunted practical (?) men are among the most ignorant in the profession, and are correspondingly a disgrace to it. We have therefore—if we would deal honestly with ourselves—to thank Mr. Goodall for his somewhat caustic remarks on the lamentable ignorance of anatomy and physiology which some of us—not forgetting myself—display.

Mr. Goodall has given clear proof in his paper that he is a master of these sciences so far as they apply to the nasal organ, and why? Because he has given special attention to that organ and its functions; perhaps if some of us were to take him to task right off the reel, without any chance of rubbing up or refreshing his memory on some other organ of the animal body, we should find that he was—well to put it mildly—not quite so well versed in the details thereof as in his own pet subject. I am not finding fault with Mr. Goodall for his denunciations of the ignorance of his brethren, not at all; it does or it ought to do us good to have a little of the conceit taken out of us occasionally, and without doubt our friend selected a subject behind the ramparts of which he could safely ensconce himself without much risk of being peppered in return, although our friend Hunting with his customary boldness and readiness for the fray made an attack upon the ramparts, and I anticipate when Mr. Goodall makes his sally, our friend will find himself ignominiously driven back without any opportunity of retrieving his fallen fortunes. The anatomy of the parts is the chief feature of Mr. Goodall's paper, and while I desire to deal hereafter mainly with the treatment of the disease—ozœna—which I suppose first suggested the idea of the subject of the essay to Mr. Goodall's mind, I must say that it is no small satisfaction to me to learn that the chief objection raised by scientific men to the system of treatment I have so successfully adopted in cases of ozœna, is completely overthrown by the anatomical proof that "the medicinal agent readily gains an entrance from the nasal chamber to the sinuses" and this is affirmed in the most positive manner as against the assertion of my friend Professor Smith who had previously stated as follows: "I hold that it is an absolute impossibility for any agents injected up the nostrils to find their way into the upper and lower sinuses." Now I don't know whether Professor Smith is prepared to admit that he made an error on this occasion, or whether he is prepared to modify the statement, or if he still persists in the truth of his assertion; but of one thing I am certain, that whether in the manner stated by Mr. Goodall or not, medicinal agents do enter the sinuses from the nasal chamber, and Mr. Goodall seems to make it quite clear that it is anatomically possible for them to do so, quite independently of the probability of their gaining an entrance into the sinus through the intervention of the circulation of the blood. My own view has always been, that a medicinal agent in solution could obtain entrance into the sinuses through both media before named, in addition to the very feasible possibility that osmosis through the schneiderian membrane plays no insignificant part in the process. In treating of the causes of ozœna I am not prepared to agree entirely with Mr. Goodall that the introduction of foreign substances into the sinuses would produce ozœna proper, indeed I go so far as to say that I doubt it, that a foreign substance, introduced into one of these sinuses lined as it is with such a delicate and sensitive membrane, would not set up irritation that might lead on to pathological developments simulating some of those of ozœna I am not prepared to dispute, but my contention is that would not be ozœna proper! and for this reason the sequelœ of such injury would be all the more difficult to deal with, because the cure could not be affected so easily through the system as in the case of a purely idiopathic disease, which I believe ozœna to be; in other words, I am of opinion with Professor Smith that ozœna is an extention, or as I should term it a pathological development, of ordinary catarrh; this is one of the reasons Professor Smith assigns in accounting for the cause of ozœna; I do not understand that it is the only cause to which he attributes the origin of

ozœna, though I am feign to confess that up to the present time, I have not been able to satisfy myself that the disease is attributable to any other cause than a pathological development of ordinary catarrh; and I am confirmed in this belief because the drug which I have invariably relied upon in the treatment of simple ozœna commences when given to the healthy subject in producing the following pathogenetic effects: first, common catarrh of the mucous membrane, the natural secretion after slight increase gradually assumes an abnormal character, both as to quantity and quality; while in the first instance it is clear and transparent, it always has a tendency to tenaciousness; as the pathogenetic influence of the drug is maintained, the consistency of the secretion changes gradually from transparency to a thick glutinous form; colour either yellow or green, and so the changes proceed until, as the result of erosion and ulceration, blood is discovered in the mucoid secretion; thus it will be seen that step by step the pathogenetic action of the drug referred to tallies exactly with the process of development observed in true cases of ozœna. In cases of injury to the membrane lining the sinuses from the introduction of foreign substances the pathological developments starting at acute inflammation and ending at ulceration are much more rapid, in which case it may materially assist the drug to effect its cure, if by means of trephining it can immediately be brought in contact with the membrane in volume; the conditions which have brought about the disease of the membrane differ from those of a simple idiopathic ozœna, and the application of the drug may with advantage be varied, while in both cases its application would prove useful.

I would therefore suggest for your earnest consideration the difference which I believe exists between an idiopathic and a traumatic ozœna, and the thought may help to clear up some of the difficulties which exist in endeavouring to account for the facility with which some cases are cured while others seem to resist our best efforts. I may mention that the drug I rely upon for the treatment of this disease is the hydrastis canadensis, and I look upon it as superior to chloride of zinc, carbolic acid, and boric acid because of its elective affinity for mucous membranes and the therapeutic relation which exists, according to the law of drug selection upon which I rely, between its pathogenetic and curative properties; moreover chloride of zinc, carbolic, and boric acids if applied in substantial quantities have each a caustic and irritant effect upon mucous membrane, and whatever curative effects are obtained by their application are secured in virtue of their antiseptic properties, and not because there is any therapeutic relation between either of the said drugs and the disease under consideration.

It is quite clear from Mr. Goodall's remarks under the heading *Therapeutic Agents* that he has not invariably obtained satisfactory results from the use of these drugs, while on the other hand I have found that hydrastis never fails and the success is obtained without the irritant effects upon the mucous membrane that is usually observable after the application of the drugs advocated by Mr. Goodall, indeed I look upon their action on mucous membrane as equivalent to an ordinary counter-irritant.

Referring to Mr. Goodall's remarks upon the influence which decayed teeth have in the production of ozœna I am fully in agreement with all he says upon the subject, and while he seems to admit that decayed teeth are occasionally responsible for the production of this form of disease on the lining membrane of the facial sinuses, I should go much further and do not hesitate to state it as my firm conviction that the one form of disease has neither relation nor connection with the other; the fact that horses which are the subjects of ozœna and at the same time have carious teeth is merely a coincidence; moreover it is quite possible to arrest the carious process in teeth, even when far advanced and to disperse an abscess situate at the end of a fang, but the remedy which is capable of acting therapeutically in this direction would have no influence at all over the pathological condition known as ozœna, a fact which I contend goes far to prove that the two diseases have no relation to one another, and that hence the one cannot by any stretch of the imagination be made responsible for the production of the other. I believe I am not wrong when I say that the mucous membrane lining the facial sinuses is in reality a continuation of that which lines the nasal chamber, known technically as the schneiderian membrane; this being so it is not difficult to understand that catarrh well established in the schneiderian membrane would readily extend to the membrane lining these sinuses, and that once the diseased process reached this quarter of the animal economy, it is not unreasonable to affirm that if such diseased process is to be arrested it must be effected through the action of an agent having a specific relation to the affected tissue; now those who have gone experimentally into the action of hydrastis canadensis know that the drug has an especial affinity for mucous membrane wherever it exists in the animal economy; that it has the power of producing on the healthy subject a catarrhal condition of mucous membrane, which if administration be continued gradually advances from one stage to another until ulceration is thoroughly established; and at the same time when these various pathological conditions are developed idiopathically, that whether applied topically or internally it has the power of arresting the disease process. I therefore submit that I have reason on my side quite independent of my own practical proofs, none of which have ever been unsuccessful, that in the hydrastis we have a remedy for ozœna that need never fail if properly and industriously followed up; and I would further submit that with the exception of such cases as Mr. Goodall has cited where foreign substances have obtained entrance into the sinuses, is it ever necessary to trephine or otherwise operate surgically, and then only with a view to the removal of such foreign substances. The range of catarrhal diseases affecting mucous membrane is rather extensive, indeed I may say co-extensive with the animal economy; for instance, in my own experience I can refer you to a form of dypepsia due to catarrh of the stomach in which hydrastis or one of its alkaloids, hydrastia, simply worked wonders; then again in cases of intestinal catarrh, which goes under the name of a chronic diarrhœa, I have observed some really marvellous cures from hydrastis; indeed I might occupy a good deal of time in recapitulating details of catarrh affecting other organs of the body lined with mucous membrane where this remedy has proved quite a saviour from suffering. You will not be surprised to learn that a drug having such a marvellous affinity for mucous membrane should prove also to be efficacious in some forms of skin disease, more especially when the exudation is of a moist character, calculated to lead on to ulceration if neglected. I have found it especially beneficial when applied as a cerate, prepared with highly rarefied lard, to cows teats when they are cracked, oozing, and fearfully painful and sore; indeed the rapidity with which they took on the healing process under the influence of this dressing was simply marvellous. I beg you to excuse this slight deviation from the main subject, but I was anxious to show that it is from a truly scientific standpoint this remedy is selected for, and proves successful against, so troublesome a disease as ozœna.

In concluding these remarks I must not omit to point out that there is one condition occasionally found in ozœna where the ulcerative process has so far advanced that the bones have become affected, in which case a permanent cure would not be realised with hydrastis

alone, as the influence of this drug does not extend to bone tissue, but there is no reason even then to despair of effecting a cure, as it would be only necessary to vary the treatment by the alternate internal administration of arseniate of gold with hydrastis. I have had but one case only during my professional experience in which I had to resort to this remedy, and then realised the most satisfactory results; but this very exceptional remedy was tested and successfully applied by two French physicians, Dr. Chrestien and Dr. Massart, in diseases affecting the bones, as also in a number of cases of phthisis, which conclusively proved what a powerful agent in such destructive diseases as these the arseniate of gold is.

I must apologise for occupying so much of your time, and once more beg to thank Mr. Goodall for the excellent material he has so ably introduced for discussion before our association.

Prof. EDGAR continued the debate. He said his first duty was to thank that association most heartily for the privilege of being invited to hear the discussion, and to offer some remarks, through the kindness of their secretary. He should like at the outset to express his very great admiration of what he regarded as the most valuable paper produced before any of their Veterinary Medical Associations for a very considerable time. (Hear, hear). He looked upon Mr. Goodall's paper as dealing with the subject in a way calculated to reflect the greatest possible credit, not only upon the worker but upon the association to which he belonged, and the profession in general; and he was quite sure the way in which Mr. Goodall had opened up the subject was a clear indication that he was a complete master of a very important branch of their work. (Hear, hear.) He endorsed most emphatically and earnestly, the remarks made by his friend Mr. Hurndall, with regard to the advantages of keeping up a knowledge of the structure and functions of the different parts of the body. Even if one in the hurry of life, was not able to keep up a detailed knowledge of all those things, yet general principles and general outlines were, without much difficulty or effort, kept before them; and such occasions as that, and such papers, helped to stimulate them in keeping up what he might call their scientific work. They were referred in that paper to the best and safest line of work—that of unravelling nature. The very strongest position of that paper was indicated on page 2, where Mr. Goodall referred to the unerring guide of what he called "The Book of Nature." He wished he had not left the book of nature. He was in a grand boat when he was dealing with the anatomy of the subject. He did not know any work on anatomy which pointed out so succinctly as Mr. Goodall had done the anatomy of those parts; and it should certainly be in the hands of every teacher of the anatomy of the horse. He believed there were very confused notions among students as to that special subject, owing to the confusion of the teaching in the veterinary schools, even at this advanced stage of knowledge. He was convinced they could not produce anything which could be compared with the work Mr. Goodall had done; and if he wished to confer a valuable gift on one of the colleges, he could not do better than transfer his specimens to one of the museums.

When he got on the subject of physiology, however, Mr. Goodall left his strong and safe position, and began to run his bark on the banks, as for instance in his reasoning with regard to the function of the air passages. But what disappointed him (Prof. Edgar) most of all in a paper of that kind—which would otherwise be unique in its value—was that he scuttled his ship when he came to the clinical aspect of the case. One would have expected to receive at the hands of such a patient and caretaking worker, such an observer of nature as Mr. Goodall, the same evenly-balanced mind, the same treatment in dealing with the whole aspect of the subject, as he had shown in dealing with a part. When they came to the concluding pages—and it was upon this practical side of the question he wished to speak—more especially with regard to the operative and therapeutic matters, then Mr. Goodall made statements as to which he (the Professor) was quite sure he was not of such a sceptical turn of mind as he would make them believe. That part of the paper did not correspond in value or fit in detail with the previous part, and so they lost the advantages which should be derived from such a vast amount of work. The object of an association of that kind in taking up the anatomy and physiology of an organ was to show its pathological relations, and the diseased condition in their clinical aspect. They were interested in the study of ozœna not only from the scientific standpoint, but as to the best way to combat that malady when they met it in every-day practice, consequently he was rather sorry to find that when they got to the end of that very valuable paper Mr. Goodall—he used the remark lightly—scuttled his ship and cut off. Commencing the paragraph on therapeutic agents he said "I have purposely refrained from saying much regarding the agents to be employed in the treatment of diseases of the sinuses. I am no believer in specifics." He did not believe the author of that paper could possibly have meant that, if they were not quibbling about mere terms. He was perfectly certain, for instance, that Mr. Goodall recognised the specific action of quinine in malarial diseases. Take another simple illustration in medicine—the action of salicylates in rheumatism. What other explanation was there than that such drugs possessed a specific action? Then, why should nature be such an unerring guide in anatomy and physiology, and leave us stranded when we came to the position in which we most needed her help? Again, he would ask Mr. Goodall if he believed in what might be called the selective power of tissues upon certain drugs? That was an altogether indisputable fact. No physician with his reputation at stake would go to an obstetric case without taking his ergot of rye with him, because he knew it had a special action on the muscular walls of the uterus. He was not prepared to say whether that action arose from the nerve centres or from the periphery of the nerve system, or whether its action was, *per se*, on the muscular coats of the uterus. Esserine had an equally specific action on the muscular walls of the intestines. That was another clear proof that certain tissues had a selective power over a certain drug. Then again if he injected a grain or two of pilocarpin in the jugular vein of a horse, he should have another splendid demonstration of the specific action of a drug on a special tissue, as a copious flow of saliva would be produced from the parotid glands within ten minutes, while 50 other drugs would have no such action. But they could not follow on that line of argument sufficiently far to be of help in every day life. If they could they would be able to positively state the actual remedy for every condition. Coming again to the treatment of ozœna, surgically and medicinally, he could not help endorsing most emphatically the statement made by his friend Mr. Hurndall, with regard to the treatment of that disease by the drug he had named, hydrastis canadensis. He was very sorry Mr. Goodall had only referred them to chloride of zinc and carbolic and boric acids—about the oldest antiseptics known—as there were unquestionably drugs of far greater value in the treatment of that disease. With reference to hydrastis canadensis it was introduced to the notice of his brother and himself by Mr. Hurndall some three years ago, for trial in veterinary practice. He had known it for a longer period as an agent in human medicine, in the case of his sister, referred to by Mr. Hurndall to show the marvellous selective power of the mucous membrane in the case of that very drug. He quite agreed with

Mr. Hurndall that catarrh of any mucous membrane might be combated by the injection of that drug. His (the speaker's) method of proceeding was to inject a solution of hydrastis into the nostrils, and also to administer the drug through the blood stream, so that it acted both through the blood and locally. In discussing Prof. Smith's paper last October, he was rather inclined to think all the cases might be dealt with with equal advantage without surgery; but a week or two after that discussion he came across a very obstinate case of ozœna in a horse. Having administered hydrastis for about three weeks, he found the advantages were not what they ought to have been, and he therefore resolved to trephine the maxillary sinus, which he knew was blocked. On opening that sinus he found it quite packed with inspissated pus; but he got a beautiful stream of the hydrastis lotion through to the posterior nares, and that case made a splendid recovery. Other cases had been equally successful.

Mr. Goodall (on page 14) used the term "nasal insufflation," by which he supposed he meant to imply injection with a syringe, with a certain amount of force up the cavity. On page 9 he said "the mucous membrane at this part is extremely sensitive, a touch induces sneezing; whereas a probe or tube may be passed high up the lower meatus with comparative ease." That was the practical difficulty. Since his friend introduced that drug to him he had treated nearly all cases of catarrh with it, and he had found in practice that after the first time or two it was not so easy a matter. The sneezing propensity came on instantly the syringe was put there; and he had found it much easier to inject with a long syringe, say 5 in., which he now always used. They only needed a nice machine to direct a perfect stream up the nostrils of the horse to make that system of treatment a perfect success. It was a nasty, disagreeable operation, and that alone was often enough to make the treatment imperfect, and therefore a case did not go on so well as it should. He thought they should get a horse far back in his stall, and fix his head high up to the post at the side, so that he could not move, and then they could get the syringe up the nostril and inject pretty fairly. He did not think it would be possible to carry out Mr. Goodall's suggested treatment more than once or twice without throwing the horse, because he did not think a horse would allow them to do it. As to the effect of hydrastis on other mucous membranes, he could testify to its splendid value. The medical profession had known it for the past twelve years, though the homœopathists knew it long before. In *The British Medical Journal* of 1880, some gentleman pointed out the special value of the drug, in regard to the mucous membranes, but, like cocaine, it had until lately been utterly ignored by the medical and the veterinary profession too; but now it was distinguished as one of the best agents to deal with chronic catarrh of the stomach. His sister had suffered for eight or nine years from gastric irritation, and probably an atonic condition of the membrane, and nothing would do her any good—indeed she could not take any flesh food for three years; but after three months' treatment with hydrastis her stomach completely regained tone, and ever since she had been altogether free from dyspepsia. He had advised many similar sufferers to take it, and always with the best results. (Applause.) Had such matters as these been added to the paper it would have been a most valuable work of reference; but as it was, he considered that if any paper during the present year was worthy of the Steel Medal that paper of Mr. Goodall's certainly was. (Hear, hear.)

Mr. Walker added his testimony as to the excellence of Mr. Goodall's paper. His disappointment with it was that pointed out by Prof. Edgar, because he had hoped it would have been of assistance in the treatment of ozœna, a chronic case of which he had in hand at the time he read it. He was sure they all thoroughly appreciated the great trouble Mr. Goodall had taken in preparing his paper and specimens, and the Association was very much obliged to him. (Hear, hear.)

Mr. Barford wished to bear testimony to the value of Mr. Goodall's paper, and to the great research by which it was distinguished. More of such papers would add very materially to the value of the association as well as to the knowledge of veterinary subjects. That paper would be of great value for many a year to come. (Applause). He could corroborate what had been said about trephining for that disease. He had himself succeeded well in trephining the sub-maxillary sinus, and also the frontal sinus. He had used, not with uniform, but with partial success, the preparation of iodoform, which he had injected up the nostrils where the thin discharge existed. If he found any quantity of pus in the sinuses he should not hesitate to trephine.

The President expressed his gratitude to Mr. Goodall for, during his year of office, bringing forth a paper which he was sure was second to none of those read from time to time by members of this association. (Hear, hear). In his experience he (Mr. Lepper) had had cases of nasal gleet in which he had been successful, and others which had not been successful. He had treated it with astringents, with disinfectants, with antiseptics, by trephining with the insufflator, and with the syringe; but he had never met with such success in any of his cases as had attended a case he had treated since their last meeting. He was called to treat a very valuable mare presenting all the symptoms of ozœna. He prescribed iodoform and other drugs; and after three weeks treatment the mare was in very much the same state. He then remembered a remark made by his friend Mr. Hurndall about hydrastis, and wrote him, and he sent full particulars as to how to use it. He followed Mr. Hurndall's directions for a fortnight, at the end of which period there was no discharge whatever. He put her to exercise, and the discharge came on again; but by keeping her quite still in her box, and persevering with the hydrastis for a further three weeks, he was able to send her home perfectly cured. The mare had now been a month in training, and up to the present there had been no return of the discharge. (Hear. hear). Some might "pooh pooh" that as "homœopathic treatment," but "the proof of the pudding is in the eating," and personally he (the President) was glad of that opportunity to tender his grateful thanks to Mr. Hurndall for his kindness. (Applause).

The following notes from Professor Smith on Mr. Goodall's paper, arrived too late to be read to the meeting:—

"In congratulating Mr. Goodall on his paper, I think he should have shewn us a little more sympathy in our ignorance, especially as his knowledge of the anatomy and physiology of the sinuses of the head according to his own showing only dates from last winter.

Referring to food in the nasal chambers, I can quite understand some of it passing into the sinuses, but it is difficult to see how inspiratory efforts drew it into a cavity which could not possibly exert any suction or aspiration upon it. Food as a cause of nasal gleet must, I should think, be uncommon. I never remember reading or meeting with a case where anything resembling food came away from these cavities on opening them, and if I did I should expect to find a bad tooth as the cause of the trouble. There was no food in the pus bags I found in the mule's head.

If I were to stuff a horse's nostrils up with iodoform I do not think it would surprise me if a little found its way into the sinus, but I should not use this as an argument that agents simply injected into the nostrils found their way into the cavities of the head.

We are not so ignorant of the anatomy of the sinuses as Mr. Goodall would have us suppose, I think we all

knew that the cavities of the face communicated with the nostril, and further that there were two cavities which did not communicate with each other. Mr. Goodall's "Book of Nature" had revealed this years ago, and I am surprised that he did not know of it till lately.

I did not say that there was a difficulty in finding the opening in the nasal chambers which communicates with the sinuses; the difficulty I dwelt on was that experienced in getting a probe into the canal, and I was then thinking of a large whalebone and not a small silver probe. Mr. Goodall's statement that the hole dilates and contracts, supports my statement that difficulty may be experienced in passing a body into the canal.

In saying that it takes 25 minutes to *expose* the opening, in the dead animal, I was not alluding to the time taken to find it.

Mr. Goodall finds fault with the sound surgical rule of making a depending opening in the head to drain the sinuses, and with them, of course, the cavities in the turbinated bones; and then later on admits the value of the practice.

The reasoning which labours to show that the cavities of the face are essential to the sense of smell leads us into the error of regarding smell as a physical process, like sound. Mr. Goodall would not surely have us believe that the sense of smell is in any way associated with vibrations of the turbinated bones!

Mr. Goodall has done good work in pointing out to us some of the anatomical and physiological arrangements of the nasal chambers, the movements of the appendices of the turbinated bones in regulating the capacity of the nasal chambers is especially good, but I cannot follow the argument that the movement of these can tend to open or close the common opening into the sinuses, nor can I understand hay seeds getting up so high. If Mr. Goodall could see the condition of the nasal chambers of a body of horses after a long dusty march it would rather surprise him, the dust is so thick that the membrane cannot be seen, all these horses should run a grave risk of ozœna, probably they would if the dust reached as high as the common opening into the sinuses, though personally I doubt it. The moist nasal membrane is an excellent trap for hay seeds and dust, and I do not think that much passes it.

Mr. Goodall dwells freely upon my statement respecting tooth extraction and disease of the sinus. This is what I said on the point:—

"In conclusion we have the question of dentistry. I believe that where we have got a very chronic discharge or irritation of those sinuses we ought to place beyond all shadow of doubt the fact whether our 4th, 5th and 6th molar teeth are sound or not. Even I should go so far as to extract the 4th molar. In one case I did extract the 4th molar. Firstly I was under the impression that it was diseased, and secondly, I wanted to establish drainage into that horse's mouth."

I hardly think that this statement warrants the interpretation placed on it by Mr. Goodall. I *did not advise* a fourth molar being extracted to establish drainage into the mouth, it is not my custom to recommend a practice which I have only tried once, and Mr. Goodall will remember that I cannot have spoken in very enthusiastic terms of this treatment, especially as he had an opportunity of seeing the specimen on the table!

Since my address on "Ozœna" I have had an opportunity of using hydrastis, so strongly recommended by Messrs. Hurndall and Edgar. My case had been operated upon as usual, but made very little improvement until I washed the sinuses out through three holes in the face with a solution of this drug. The animal rapidly recovered and never showed any sign of recurrence.

In conclusion I beg to congratulate Mr. Goodall on his extremely able paper.

FRED. SMITH.

Mr. HURNDALL said Prof. Edgar had referred to the difficulty, after two or three operations, of getting all the patients that came under their care to bear with the injection of a solution up the nasal chambers. Strange to say, only two or three days ago he met Mr. Moore, a veterinary surgeon whom they all knew, and who was about the only other person in the United Kingdom, as a veterinarian, who had his (Mr. Hurndall's) belief in homœopathic principles. Mr. Moore rather challenged him upon the subject, saying his father had brought the matter before the public—at all events in one of the works he had published. He (the speaker) had never seen the work, but had gained his information about the use of hydrastis from the homœopathic "materia medica"—"The action of drugs." However, Mr. Moore told him how he applied the drug, and he thought it might prove useful to others. He put the drug into hot water, and then, by means of an "atomiser," he introduced it up the nostril in the form of a spray. That could be done, he took it, without irritating the horse so much. He hoped Mr. Moore would see that he was not slow to give him credit for any information received from him. (Hear, hear.) In conclusion Mr. Hurndall mentioned some striking instances of the value of hydrastis canadensis in cases of indigestion and other disorders in the human system.

Mr. GOODALL (who was much pressed for time owing to the hour to which the debate had been prolonged) replied briefly on the whole discussion, illustrating his remarks with a number of beautifully prepared specimens. Having thanked those present and the other members of the Association for the very courteous and kind way in which they had received his paper, he said that when Mr. Hurndall first wrote to him kindly proposing that he should prepare a paper he replied, giving the subject he should like to bring forward, and asking him to write to whomsoever he knew to be interested in the subject, that they might be equally well prepared to enter into a discussion. His idea was that an essay should not be written so much for the glorification of the essayist as for the benefit of the profession. (Hear, hear.) The discussion that afternoon had centered more upon the question of treatment than upon matters of anatomy and physiology. As they would see by the title of his paper it was intended primarily as an anatomical and physiological demonstration. They should remember that it was written as a kind of sequel to one from Professor Smith who gave a paper on the subject at a meeting of a kindred association about a year ago, in which he made use of certain statements with regard to the anatomy of the head of the horse, which, from a purely accidental circumstance, he (Mr. Goodall) had found to be wrong.

Having felt that he ought to take some early opportunity of publishing his facts, he began to "look into" other horses' heads, the result being that he could not help coming to the conclusion that their knowledge of the anatomy of these parts was faulty. He prepared the specimens he had exhibited specially for the purpose of demonstrating this, and having shown where our knowledge had been defective, his only allusion to the treatment was to demonstrate that with this more accurate knowledge, our methods of applying our remedies should be modified.

Sir James Paget, in a recent address to students remarked that he considered surgery changed every ten years, or in other words, unless a man was a student all his life he would soon be unfitted to practise surgery.

Mr. Goodall still thought that the pus bags mentioned by Professor Smith would probably have been found to contain particles of food as their centres, had a very careful examination been made.

Prof. Smith asked for proof of the opening and closing of the communicating orifice, he (Mr. Goodall) had taken the trouble to prepare a specimen to demonstrate this,

and was sorry Prof. Smith could not be present, he showed by his preparation that the outer part of the posterior extremity of the maxillary turbinated bone *was free*, and that it doubtless opened and closed in the form of a *valve* against the inner aspect of the maxillary bone, and the plate forming the base of the ethmoidal turbinated bone.

Prof. Smith then says that though they have been so ignorant, their old methods have been successful; well, that this has not always been so, is proved by his having brought his morbid srecimens with him on the occasion referred to.

He scarcely knew how to reply to Mr. Hunting, first he ridiculed theology, and he (Mr. Goodall) felt that a man who could (just to take one small instance) look upon such a marvellous adaptation of parts for their purposes, as shown by the beautiful arrangement of the different nasal chambers of the specimens before them, and *profess* that he doubts the existence of a Creative and Ruling Power, could scarcely be regarded as, what should he say? sane! (Hear, hear, and a laugh).

Then he ridiculed, too, the study of what was known as Darwinism—On the other hand Sir James Paget had on one occasion in an address to the British Medical Association advocated members of the medical professson taking up the study of the diseases of *plants*, pointing out that in that study, "human pathologists may find, in "watching the consequences of injuries and diseases of "plants, facts of the highest interest in their more proper "study." Surely then we, the veterinary profession, may learn something that may assist us in accounting for certain causes and effects in our patients proper, by taking up such lines of research as those from which he (Mr. Goodall) had deducted certain facts. (Hear, hear).

Mr. Goodall then compared the turbinated bones of the horse, hound, and other animals, to show that however different their formation might be they acted in the same way, only that certain parts were more complicated as their functions were more highly developed, as, for instance, the turbinated bones of the fox-hound and fox for the sense of smell—pointing out that by studying comparative anatomy in this way, and going to the lower forms of life, they might cull many of nature's secrets for their own enlightment. (Hear, hear.)

Again, Mr. Hunting had said that if a violent respiratory effort might cause food or foreign bodies to pass into the sinuses, every day, when a horse was put to violent exertion this would be occurring; but as he (Mr. Goodall) had pointed out, in *normal* respiration, never mind how violent the effort, the corner of the maxillary turbinated bone was drawn into the false nostril and thus closed the middle meatus.

If they rode one horse and led another (which was the best method of studying this) they would find that, as the nostril was dilated by the exercise, so did the false nostril bulge out, and thus the middle meatus of the nasal chamber was closed. (Demonstrations from fresh subject). That, as he showed, was most beautifully arranged to protect the sinuses against the entry of foreign bodies. In such an act as choking, however, as all would know who had seen a choking horse, the respiratory efforts were tremendous and altogether abnormal; and then surely it would not be a difficult matter for ingesta to be drawn through this orifice into the sinuses.

Then he said he did not believe the turbinated bones had anything to do with olfaction. Mr. Goodall here demonstrated by an exhibition of the arrangement of the nasal chambers of the hound, fox, cow, etc., that the function of the maxillary turbinated bone is to moisten and rarefy the air before it strikes on the olfactory nerves distributed in the ethmoidal cells, of which, doubtless, the ethmoidal turbinated bone must be regarded as one.

He also very much "mixed up" his (Mr. Goodall's) remarks about the eustachian tubes and the openings of these orifices, and also about the death struggles.

Mr. Faulkner remarked that it was usual for Manchester practitioners to have about six cases of ozœna a year to treat, which (looking at the condition of the atmosphere of that city) rather bore out his (Mr. Goodall's theory that foreign substances were a possibly overlooked cause. An ordinary *post-mortem* by a veterinary surgeon in a case of that kind would be of no use, especially if the horse had been ailing any time, proof of ingesta in the sinuses would have to be sought after very carefully, and perhaps even by analysis (Hear, hear.) By reference to the paper now printed Mr. Goodall reminded them that he never suggested the likelihood of the sinuses being *impacted* with ingesta, but that a *very little* would act as a foreign body, and set up so much irritation as to induce inflammation and suppuration. (Hear, hear.)

In conclusion, he repeated that his paper was simply brought forward as a kind of reply to Prof. Smith, and, therefore, he owed, perhaps, an apology to the association for not having entered more fully into the question of the treatment of disease of these parts. (Applause.)

A very hearty vote of thanks having been accorded to Mr. Goodall, on the proposition of Mr. Barford, seconded by Mr. Wilson, the meeting closed with a similar compliment to the outgoing President.

J. Sutcliffe Hurndall, *Hon. Sec.*
Sussex Villas, Kensington

WESTERN COUNTIES VETERINARY MEDICAL ASSOCIATION.

The half-yearly meeting of the above Association was held on Thursday, 20th October, 1892, at Chubb's Hotel, Plymouth. The President, Mr. G. H. Elder, of Taunton, occupied the chair, and there were present Messrs. Jas. Collings, Exeter; P. G. Bond, F. P. Collings, Plymouth; G. H. Gibbings, Tavistock; F. T. Harvey, St. Columb; A. E. Michell, St. Austell; A. H. Oliver, Devonport; Thos. Olver, Truro; and the Hon. Secretary.

Apologies for non-attendance were received from Prof. Penberthy, Messrs. W. Penhale, Barnstaple; C. Parsons, F. E. Place and W. Roach. The minutes of the previous meeting were read and confirmed.

The Secretary read the circular letter which had been received from Sir Joseph Lister, advocating the claims of the British Institute of Preventive Medicine, and requesting the Association's help in behalf of the proposed institute.

The President felt sure that the members would be heartily in accord with the objects of the Institute, they were such as could not do other than commend themselves to all scientists, of whatever grade. The benefits to be obtained would, without doubt, be at least equally shared by veterinary surgeons. He had the greatest pleasure in proposing that a vote of ten guineas be made to the fund.

The Secretary seconded the motion, and it was unanimously adopted.

The President said his first duty was to thank the Association for the honour it had done him by his election to the chair. He had at first hesitated about accepting the position, feeling that it was undeserved, but he trusted that an even increased interest in the Society and its doings would make his term of office a successful one. Like the kindred associations this one was becoming of increased importance, and—as evidenced by the vote just made—was ever ready to assist in really good work. Meetings of veterinary surgeons were always productive of good fellowship, and he was bound to admit

generally helped to rub off the rust which at times will accumulate.

The profession was undoubtedly moving on; from a scientific point of view, its outlook was never brighter. The increased curriculum and standard of matriculation, and particularly the uniformity of the latter, were changes calculated to help the forward movement to an extent perhaps yet scarcely appreciated. Then, too, the granting of the new Charter had removed many grievances, and all things considered the profession was certainly bidding fair to become a happy family.

In his further remarks the President devoted himself to the subject of Preventive Medicine. He said that this subject was one becoming daily of greater importance, and in which undoubtedly, in the future, our greatest sphere of usefulness would lie. Bacteriology was making gigantic strides; it had already done great things in some of our stock diseases, and, as a result of its study, greater were still to follow. He took this opportunity of emphasising the utility of such an institution as that which had just been brought before their notice. It did seem an anomaly that British scientists—cramped hitherto by law—had either to go abroad, or to leave all investigation to be done by foreigners. He was, however, confident that the advancement of the veterinary profession was real, and that it was daily becoming more and more able and willing to help itself.

The address was received with applause.

Mr. F. T. Harvey—after detailing a case of verminous aneurism in the anterior mesenteric artery of a two year old colt—then read a paper of which the following is an abstract:—

TRAUMATIC ARTHRITIS.

Abstract of a Paper by F. T. Harvey, F.R.C.V.S.

There seems three principal forms of injury by which joints are damaged, viz., sprains, contusions, and wounds, particularly those penetrating the joint cavity. A joint may be injured in all three ways at the same time, the resulting inflammation being most severe. A joint may also become diseased from the spreading of inflammation in the continuity of tissue from other parts—a diseased bone or lymphangitis. When a wound communicates with the joint cavity the inflammation usually takes on a septic character as distinct from that of simple traumatic arthritis, which is usually characterised, when recent, by the large amount of serous exudation and little tendency to pus formation, the cartilage and bone generally escaping.

Contusion. Kicks in equine surgery are by far the most frequent forms of contusions, and are often accompanied by wounds more or less severe. Knocks, falls, and blows are also frequent causes of inflammation of the capsule, especially when accompanied by a break of skin. Hæmorrhage and extravasation are the first events occurring in a bruised tissue. A joint may there be suddenly distended with blood *(hæmarthrosis)* an event however of no great surgical importance, provided no wound of the capsule is present, the effused blood slowly undergoing absorption. A severe bruise near a joint is the more liable to be followed by arthritis if the animal is in ill-health, or has been otherwise neglected. Thus we see stiff joints following slight cases of 'broken knees' and quite recently a case of inflammation of the hind fetlock followed a small wound well above the joint, inflicted by the opposite shoe. On the third day after the injury there was some swelling and the wound was foul, but the lameness was very slight. The mare had recentlybeen put on a "work diet." Cold water was applied to the leg for four hours continuously by the groom, with the result that the lameness became excessive, and when seen by me well marked arthritis was established. Had this small wound been kept aseptic probably no extension to the joint would have occurred. In all contused wounds some amount of adjacent tissue is damaged, which naturally forms a favourable field for the geneses of a spreading inflammation. Exposure to cold and wet or to east winds, especially in rheumatic constitutions, may also increase the liability to arthritis following a contusion. In like manner will local lymph stasis conduce to the same result, or the presence in the tissues generally of an abnormal amount of effete material.

As above stated the changes occurring in simple traumatic arthritis from whatever cause, affect in the earlier stages tissues other than bone and cartilage, very rarely in our patients proceeding to abscess formations. Nevertheless in some cases the tension within the joint may become so great that the capsule gives way, the contained fluid quickly burrowing into the surrounding areolar tissue. According to Erichsen however it is probable that in all these cases some destructive change in the synovial membrane preceded its rupture. When the capsule gives way and the fluid burrows, pointing commonly takes place at some distance from the joint—but not always, the result being dependent on the disposition of the parts. This rupture of the capsule is an event of great surgical importance, as the case will probably shortly become one of open joint The symptoms following the rupture may be at first deceptive, owing to the great relief of tension which follows. With the relief of pain however there follows in a few days an increase of the swelling of a boggy character, which continues until pointing takes place. When this occurs the temperature falls, and continues lower until septic arthritis sets in, as a result of the communication with the external air which is established by the pointing.

Case I. A ten year old in-foal mare, thoroughbred, was seen on September 9th, 1891. On the 7th her off hind leg was found enlarged. A similar swelling of the limb was seen a fortnight previously, passing off without treatment in a few days. The case seemed one of lymphangitis in a not very severe form. The attendant irrigated the leg almost continuously with cold water. The swelling and lameness increased, and by the 9th the leg was very tense, hot, and painful. There was evidently deep seated inflammation in the hock. Warm fomentations were ordered and febrifuges administered internally. The swelling continued to increase, and on the 12th an abscess was found pointing in front and to the outside of the true hock joint. The skin gave way on the 13th, and a large quantity of serum with large flakes of fibrin and oily looking material escaped. The pain and swelling became less, but the discharge was abundant for some days. Nothing like pus however came from the wound, and on the 17th almost pure synovia was being discharged. The discharge ceased on the 24th, and the last visit was made on October 4th. The hock was then slightly enlarged but there was no lameness.

Case II. This case contrasts very strongly with the previous one in its history, mode of treatment, and results. Bay harness gelding, three years old, getting at time of accident a full allowance of corn and little work.

April 20th, 1890. On the 16th he was found with both fore legs over his halter, the rope gripping tightly the left elbow joint. He was almost exhausted with struggling and when liberated continued in great pain. He had been severely purged with linseed oil before I saw him, when he looked a complete wreck. Cold water had been applied to the swollen left leg.

Symptoms: Pulse 80, temp. 104. Respiration 30, very lame on near fore leg and very painful over region of elbow, shoulder and chest. The joint (elbow) was moderately enlarged and very hot. No fluctuation of the capsule could be felt. The symptoms continued severe for four days, the pain then becomes less, and the

breathing quiet, but the temperature remained about 103. This relief of pain probably corresponds with the easing of tension in the elbow joint from the rupture of the capsule, for shortly an œdematous condition appeared down the leg and along the breast, and went on increasing until pointing took place. The fluid was discharged about three inches below the level of the elbow joint, in front and to the outside. The discharge was similar to Case I. The lameness and swelling then almost disappeared and the temperature fell to 101. A suspicious looking discharge continued, however, and on the fifth day after the pointing there could be no doubt that septic arthritis had set in. The joint again became hot, tender, and swollen, and the discharge purulent and profuse. The horse was subsequently destroyed.

This case offers some points for discussion. There seems some doubt as to whether the capsular ligament of the elbow joint can be felt fluctuating when distended with synovia. Professor Dick saying that it could be felt, and Prof. Williams holding the contrary view, with which opinion I am disposed to agree. The capsule gave way apparently on the outside, at which point, according to Chauveau, the ligament is exceedingly thin. The only point at which fluctuation would be felt would be at the cul-de-sac in the olecranian fossa, but here the sac is rather deep, and buried by the small extensor of the fore-arm.

The indication of treatment, in all these cases of opening of a joint from within, is to prevent the entrance of impure air from without, and thereby to prevent the onset of septic arthritis, for there is good reason to suppose that many cases of rupture of the capsule from high tension in simple arthritis would make fair recoveries if that event could be warded off. How is it to be accomplished. The treatment in Case I. was on the principle of dry absorbent dressing. Much labour was required in carrying out the details for the first week or until the discharge ceased. Boracic acid powder and cotton wool, were the chief agents used. A large quantity of the acid was placed over the wound as soon as the first rush had lessened and plenty of wool over this and then a bandage. As soon as there was the least sign of the wool getting wet through, the dressing was removed and fresh dressing applied. The wound and skin was washed with perchloride of mercury solutions, 1-1000. No warm fomentations were used lest they might contaminate the wound. When granulation began and synovia alone came from the wound, iodoform and oil of cloves were used in addition to the acid powder. When the wound closed warm fomentations were again employed. No single symptom to cause alarm occurred throughout. In Case II. plugging, blisters, cold irrigation and the whole series of remedies usually recommended in open joint were tried without avail.

The treatment of arthritis from contusions will be discussed with that of open joint, but as means of prevention one would guard against passive œdema and keep any wounds near joint aseptic

Wounds of Joints. A joint is known to be wounded when synovia escapes, or when the interior of the articulation is exposed. In all doubtful cases the wound should be treated as one of open joint, the question being subsequently decided.

Pathology. Probably in no branch of surgery has the principles and practice of Listerism produced more important results therapeutically, or led to a more perfect understanding of the cause and nature of the changes occurring, than in that particular class of injury called open joint. A joint consists usually of an irregular cavity capable of very considerable distension, and difficult to drain properly. The effect of a wound is to cause an effusion of blood followed by an increase of synovia and by much serous exudation. If to those we add impure air we have all the conditions for fermentation, on which practically depends all the trouble we often encounter in open joint. For although synovia when in excess in a joint is inside the body as regards temperature, it is yet outside of it in so far that it is beyond the reach of living tissue. According to Sanderson, air, water and septic organisms themselves, are all harmless when enclosed in a serous membrane if they are rapidly absorbed. In order that germs may have the opportunity of doing their fatal work there must be in contact with the living tissue, non-living soil in which they can vegetate. Germs, then, being addmitted to a cavity containing a putresible fluid, putrefaction frequently follows, and the synovial membrane and cartilages become bathed in septic fluid. Acute inflammation results which extends to the ligaments and other structures of the articulation; and if the disease is not arrested the whole joint becomes completely disorganised, and anchylosis results, or the animal dies from septicœmia or exhaustion. As with other serous surfaces, the synovial membrane absorbs very rapidly, as soon therefore, as it is bathed with septic fluid, fever becomes a prominent feature and there appears to be some connection between the size of the joint, and the resulting fever—witness the high mortality attending wounds of the stifle joint, though in many of these cases the pain is less acute than in the case of wounds of joints lower down the limb. With the development of granulation tissue within the joint the fever becomes less severe, and the danger of death from septic causes is thereby lessened.

The course of the inflammation may be aggravated by want of rest, by the unhealthy condition of tho patient, and by the bad hygienic surroundings in which he may be placed. Abscesses may form around the articulation, and not unfrequently closure of the original wound is followed by an opening at some other point. When a wounded joint escapes this destructive inflammation it is generally owing to the wound being small, and union occurring by first intention, the after progress of the case being the same as in a subcutaneous injury; or the wound is large and situated at some point favourable for natural drainage. The medium size wound is said to be the most dangerous—too large to heal by first intention and too small to drain the joint. Young animals usually suffer less from wound of joints than older ones provided they are free from any taint of omphalo-phlebitis or of tuberculosis. Gun-shot wounds are at all times the most dangerous.

Treatment of Arthritis. This necessarily includes the prevention of inflammation. Unfortunately in veterinary surgery we are called in but rarely before inflammation has began, except in the case of the most severe injuries, or in other cases we may have great difficulty in deciding what the original injury really was or what time has elapsed since its occurrence. Whether, however, as preventive or curative there are certain general means which we should, if possible, always have recourse to, and the principal of which is *rest*.

Perfect rest, however, is to a great extent impracticable in veterinary surgery, and is a totally different affair from the kind of rest the human surgeon obtains. Slings should be adopted early, as it is probably of as much use in preventiug as in curing inflammation. The antiseptic treatment of a joint without them is unsatisfactory. Slinging prevents displacement of dressings by limiting motions, and that at a time when the absense of passive œdema permits us to keep the animal quiet. The continuous use of slings when there is much œdema is questionable. Rest may be further obtained by the use of splints, but they are not of much avail except in the case of the knee or fetlock joints. Another mode of procuring rest to an inflamed joint is in the use of blisters, but they are rarely used entirely for this purpose, and never in the earliest stage.

As a general means of preventing or moderating inflammation, purgatives are often of great use. They re-

move any effete material present in the blood and thus increase the natural antiseptic power of the normal tissues. They also enable us to keep the patient at rest longer than we otherwise might. Moderate purgation is probably of use about the time that an open joint closes, if the animal has not been much weakened. For the first few days after the closing is a critical time with the joint, as there is often much swelling and not rarely it re-opens, thus frequently giving us further trouble and anxiety.

Febrifuges and sedatives are frequently also useful, notably aconite; salicylate of soda in half ounce doses I consider of value in counteracting fever of a septic type. It is needless to add that the diet must be light to begin with.

Local Measures.—Cold. The choice of cold or hot water is frequently a matter of opinion, some surgeons preferring one, some the other. Personally, I usually find warm water a much more manageable remedy than cold. I am quite convinced that the use of cold water in the early stage of a spreading inflammation in the vicinity of a joint is likely to do mischief. Cold water in order to prevent the onset of arthritis must be used as early as possible after the injury and must be continuous. But how often do we see cases before inflammation has begun or the wound fouled, especially in the country? The late Mr. Hilton was very emphatic on the value of continuous cold irrigation in not only preventing but also in controlling inflammation after traumatic injury. He said: "The cold should be applied with a spirit of defiance to the inflammatory condition, and a fixed determination not to permit its occurrence" (Lectures on Rest and Pain). The frequent but intermittent application of cold water and of cooling lotions he considered unphysiological and feeble as preventives of inflammation in a joint; with which opinion I am in agreement. In adopting continuous irrigation in a wounded joint a difficulty presents itself in regard to the wounds, as it is practically impossible to keep a wound aseptic with cold water running down the limb. The human surgeon gets over the difficulty by the use of dry cold, such as ice in india-rubber bags or by Leiter's tubes.

Heat. As differing from the last should always be moist. After inflammation has set in warm water gives better results than cold as a rule. After dressing the wound with some dry absorbent dressing the joint, if a small one, may be wrapped in spongio-piline wrung out of hot water, and a dry bandage placed over all. In this way the granulations do not become reddened nor is the wound so liable to be fouled. When warm fomentations are used the length of time they are to be applied will depend on the tension of pain, and on the state of the wound if one is present.

Blisters. There seem to be great unanimity as to the value of blisters in all forms of arthritis, and especially in open joint, but I have not been quite satisfied with the results I have had from blisters in open joint. The practice however is an old one, and has experience to recommend it. Blisters are certainly of value when the acute symptoms have been moderated by other soothing means. Among the remedies used to stop the flow of oil from a joint, oil of cloves is of great value. Its power does not seem to depend entirely on its antiseptic properties. It seems in some way or other to influence the nutrition of the parts and promote healing when other antiseptics do not. Drainage of joints has not being attempted as yet in veterinary surgery, but it is probable that in some cases it would be of value. The sealing up of a joint when its cavity contained much putrefactive material, and that under pressure does not seem very rational.

In an animated discussion, which followed, all the members present took part—the concensus of opinion favouring the treatment of open joint by cold effusion and oil of cloves. The usual votes of thanks terminated the meeting, after which the members dined together.

W. H. Bloye, *Hon. Sec.*

Extract from the Report on the Bacteriological Department, King's College, London,

In 1886 the Council resolved to meet the great demand, which existed at that time and has since increased, for courses of lectures and practical instruction in Bacteriology. Mr. Crookshank, a former pupil of King's College, accepted the Lectureship, the first appointment of its kind in this country, and accommodation for practical instruction was provided in one of the class-rooms of the Physiological Laboratory.

The success of these classes was so great that the Council resolved to provide special and permanent accommodation for the courses of instruction, and to grant facilities also for original research. For this purpose the Council created a department distinct from that of Physiology, and one of the largest lecture-rooms in the College, admirably adapted for microscopical work, was converted into a teaching and research laboratory and lecture-room, and additional rooms were built for the Professor and to complete the necessary accommodation.

The Laboratory was duly licensed for research, and Mr. Crookshank was promoted to the newly-created professorial Chair; and with the aid of a contribution from him of £1000 towards the expenses of the Laboratory the Council were able without any loss of time, to equip the Laboratory with all the fittings, instruments and material necessary for the investigation of the diseases of man and the lower animals, and for the study of Bacteriology in all its applications.

To enter as a pupil, or for the purpose of undertaking original investigation, it is not necessary to have had any previous connection with King's College. The Laboratory has been opened to all, and as set forth in the original syllabus, special inducements were offered from the very first to medial men in practice, medical officers of health, analysts, medical and veterinary officers of the Services, and any others whose duties might prevent a daily attendance.

It will be a source of satisfaction and gratification to the Council to learn that, from the foundation six years ago up to the date of this Report, the number of students qualified and unqualified who have entered the Laboratory for instruction or for research amounts to 419. This number comprises general practitioners, army and navy surgeons, medical officers of health, analysts, biologists, veterinary surgeons, and veterinary and medical students.

Important researches have been carried out on behalf of the Agricultural Department of the Privy Council—now the Board of Agriculture—and Professor Crookshank, who undertook these researches, received in 1890 the thanks of the Privy Council. The results were published in the following reports:

1. Report on the so-called Hendon Cow Disease and it relation to Scarlet Fever in Man. 2. Report on a Micro-organism alleged to be the contagium of Scarlet Fever. 3. Report on Anthrax in Swine. 4. Report on Tubercular Mammitis in Cows and the Infectivity of the Milk. 5. Reports on Actinomycosis in Cattle and Man. 6. Report on Cowpox and Horsepox.

The Council will see from this Report that original investigation has been a very important part of the work conducted in the Laboratory of King's College since its foundation; but as a department of King's College, it is especially necessary at the present time to lay stress upon the fact that it has occupied and still retains a unique position in this country as a *teaching institution*. It was not only the first laboratory established, but it always has been, and still is, in marked contrast to the bacteriological laboratories attached to the pathological department of some of the medical schools, in that systematic courses of instruction are regularly given throughout the whole academical year and are open to any one.

JOHN CURNOW, M.D.,
Dean of the Medical Department.
HENRY WACE, D.D., *Principal.*

Nov, 7, 1892.

SMALL BORE BULLETS.

The following letter appeared in *The Army and Navy Gazette* of Dec., 3rd.

In accordance with the promise made in my letter on the above subject in your issue of 17th September, I beg to acquaint you with the results of the further trials made with the Lee-Metford bullet in the experiments conducted by Major Crabbe, District Inspector of Musketry, and myself. The bones used were those of the horse; the ranges fired at were every hundred yards from 100 yards to 1,000 yards. In this way we have ascertained the destructive effect of the projectile for all ordinary ranges. From 50 to 200 yards the effects, no matter where the bone is hit, are the same, viz., absolute destruction and demolition of the part. From 300 yards to 1000 yards a law has been established which explains the great difference of opinion held regarding the destruction effected by the bullet. To render this law clear, I must explain that the resistance offered by a bone is not the same throughout its length; the shaft of a bone consists of dense material of considerable strength and great power of resistance; the extremities of a bone consist of highly spongy substance, offering comparatively little resistance. We have found that when a bullet strikes the shaft of a bone, the resistance to its passage being considerable, the part is shattered, the bone being fissured in all directions, and great loss of substance occurs; in fact, there is little to choose in the destruction effected whether the bullet be fired at 50 or 1000 yards. On the other hand, when the spongy extremities of the bone are struck at any distance between 30 and 1000 yards, a hole results, sometimes perfectly clean, but often with fissuring, the fissures extending or not into the joint. If the extremity of the bone possesses rather more compact than spongy tissue, as in some of the bones of the extremities of the horse, the pulverizing effect is at once produced, and no clean hole is made. In this way we can account for the difference of opinion held respecting the destructive effects of the bullet. To the surgeon these experiments should be of great value; it is probable that in the case of a man it will be better for him to be hit somewhere near a joint rather than at a great distance from it, a law which, in the first instance, appears almost paradoxical, but which is supported by actual experiments and by the reasoning we have offered.

FRED SMITH.

A. V. School, Aldershot, Nov. 29.

CORRESPONDENCE.

THE FELLOWSHIP.

SIR,

I have just read Mr. F. W. Garnett's letter referring to Mr. Malcolm's comment on your leader of November 12th. Mr. Garnett states that he "looks upon the degree as a fraud on the public, and a disgrace to the profession."

Now, sir, such expressions from anyone are, to say the least, strong, and not in the best of taste, especially so when emanating from a member of not two years standing. I only hope and believe that by the time Mr. Garnet is qualified to present himself as a candidate for the Fellowship Degree, viz., in 1896, the examination may be of that high standard he desires. Mr. Garnett thanks the Fellows for the marked interest they have taken (and may I add are taking) in the welfare of the Membership examination, and I feel sure that the Council when its work (and no light work either) in this direction is more advanced, will then be able to turn its attention to the Fellowship examination. In the meantime I must say that, with Mr. Malcolm, I fail to see that anything is gained by endeavouring to discredit those of our profession who have obtained the Fellowship Degree.

T. H. MERRICK, F.R.C.V.S.

SLEEP AND WORK.

SIR,

To your comments on the immense amount of work accomplished by Captain Fred Smith, may I be allowed to add that he is a living testimony against sleepiness. It has passed into a proverb that six hours for a man, seven for a woman, and eight for a fool is enough of sleep, but when I was in camp at Aldershot and had opportunity of visiting my old fellow student I ascertained that he only allowed himself five hours, and to all amusements but the absorbing studies of his life, he was a complete stranger. Perhaps he will some day teach us the physiology of sleep, for we know but little about it though prepossessed in its favour towards morning. Some of us can read at night, and some few in the morning, but only the Napoleons of war or science can burn the candle at both ends and yet enjoy such robust health as to develop from a slim youth to the "full stature of a man." How much of sleep is mere habit, and how much necessity, it would be interesting to learn from one who has dived so deeply into physiology as Capt. Smith. His contributions have enriched our literature and embellished your journal, Mr. Editor, from time to time, bearing a high interest for your readers—like the two Dollars you have invested in translations, so justly eulogised by "McM."

HAROLD LEENEY, M.R.C.V.S.

COMMUNICATIONS, BOOKS, AND PAPERS RECEIVED:—Messrs W. H. Bloye, S. Beeson, E. Wallis Hoare, T. H. Merrick H. Leeney, "Year Book" ("Farmer and Stock Breeder."

We shall be obliged by early intelligence of all matters worth bringing under the notice of the profession, and thankful to any friends who may send us cuttings from local papers, containing facts of interest.

Original articles and reports should be written on one side only of the paper, and authenticated by the names and addresses of the writers, not necessarily for publication.

Communications for the Editor to be addressed 20 Fulham Road, S.W.